Valvata piscinalis

European Stream Valvatta

Geography and Habitat

1. The European valve snail is native to Europe, the Causcasus, western Siberia and Central Asia.
2. It is common in freshwater environments and is established in the Great Lakes.
3. V. piscinalis was originally introduced to Lake Ontario in 1897. In the following 40 years, its range expanded to Lake Erie and to the St. Lawrence River, Hudson River, Champlain Lake and Cayuga Lake.
4. Found anywhere from 0.5-23 m in the Great Lakes.
5. V. piscinalis can tolerate varying calcium concentrations and does not require very high temperatures to survive.
6. It can tolerate salinities of 0.2 %
7. In the northern parts of the Curonian Lagoon, it experiences periods of saline water for a few hours or days at a time.

Ecological and Economic Impacts

1. V. piscinalis is an efficient feeder and grazes upon epiphytic algae and detritus.
2. In more eutrophic environments it is capable of filter feeding on suspended organic matter and algae as well as rasping off pieces of aquatic vegetation.
3. V. piscinalis is a common first intermediate host for the parasitic trematod *Echinoparyphium recurvatum*.
4. When introduced to Oneida Lake, native gastropods (more specificially, hydrobiid snails) decreased in abundance, possibly due to competition.
5. This species has a high potential to compete with native gastropods for food and space. It will likely out-compete due to its capability of filter feeding on suspended food items in eutrophic conditions.

Invasion Pathways

1. Human facilitated. This species was most likely introduced to Lake Ontario in packing material made of straw and marsh grasses from Europe.
2. Range expansion may be attributed to natural dispersal.
3. More recent records of the 1990s and first decade of the 21st century may have been aided by human-mediated dispersal on ships via canals.

Management Difficulty

1. V. piscinalis is known for its rapid growth and high fecundity, making it a difficult species to manage.
2. Individuals can overwinter in mud, allowing for a growth period.
3. It may spawn 2-3 times in a year, laying up to 150 eggs at a time.
4. V. piscinalis has a chemosensory perception which allows it to detect nearby leeches and distinguish molluscivores from non-molluscivores, and thus close its operculum to avoid predation.

Sources

1. http://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1043
2. http://www.helicina.de/galerie/Valvata_piscinalis.jpg